

Remarks

Claims 1, 9, 17, 19 and 20 have been amended.

The Examiner has rejected applicants' claims 19 and 20 under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The Examiner has argued that claims 19 and 20 contain the elements as "determining single degree" which was not described in the specification, it is not clear, concise and exact terms as to enable any person skilled in the art to which it pertains. Applicants respectfully disagree with the Examiner's argument. In particular, applicants' FIG. 7 shows a process in which image-to-image distance values $S(n)$ ("degrees of similarities") between each retrieval source image and the selected image are calculated and the smallest image-to-image distance value $S(n)$ ("single degree of similarity") is determined and retained as the image-to-image distance ("degree of similarity") between the retrieval source image and the selected image. See, page 21, lines 2-7. Therefore, the element of determining a single degree of similarity from the set of degrees of similarities is disclosed in applicants' specification and drawings, and applicants thus believe that claims 19 and 20 are in compliance with 35 USC 112, first paragraph. The Examiner's rejection is therefore traversed.

The Examiner has rejected applicants' claims 1-3, 7, 9-11, 15, 17, 19 and 20 under 35 U.S.C. §102(e) as being anticipated by the Silvers (U.S. 6,137,498) patent. Applicants have amended applicants' independent claims 1, 9, 17, 19 and 20, and with respect to such claims, as amended, and their respective dependent claims, the Examiner's rejection is respectfully traversed.

Applicants' independent claims 1, 9, 17, 19 and 20 have been amended to better define applicants' invention. More particularly, applicants' independent claim 1 has now been

amended to recite feature calculation means for dividing a retrieval source image into the predetermined number of tile images and obtaining a set of image features by calculating an image feature of each of the tile images, acquisition means for generating a set of image features by multiplying each of the image features constituting the set of image features that have been stored in said storage means, by a constant, and acquiring plural sets of image features regarding one image by varying the constant, and similarity calculating means for calculating degree of similarity between each of the plurality of images and the retrieval source image based upon the plural sets of image features acquired by the acquisition means and the set of image features calculated by the feature calculation means, wherein the similarity calculating means calculates degree of similarity between each set of the plural sets of image features acquired by the acquisition means and the set of image features calculated by the feature calculation means, and adopts maximum degree of similarity as the degree of similarity between a particular image and the retrieval-source image. Applicants' independent claims 9 and 17 have been similarly amended.

Applicants' independent claim 19 has been amended to recite feature calculating means for obtaining a set of image features by calculating image feature of each color component of the retrieval source image, respectively, selection means for selecting one image from a plurality of images stored in a database, reading means for reading a set of image features of the selected image and generation means for generating a set of image features by multiplying the set of image features of the retrieval source image or the set of image features of the selected image by a variable. Applicants' independent claim 20 has been similarly amended.

The constructions recited in applicants' independent claims 1, 9, 17, 19 and 20, and their respective dependent claims, are not taught or suggested by the cited art of record. More particularly, with respect to applicants' claims 1, 9 and 17, the Examiner has argued as follows:

“...Sillers discloses: An image retrieval apparatus for retrieving a desired image from a plurality of stored images, comprising:

...feature calculation means for dividing a retrieval source image into the predetermined number of tiles and calculating image features for every tile (col. 4, lines 12-44 and , Silvers);

an acquisition means for generating image features by multiplying each of the image features of the plurality of tiles that have been stored in the storage means, by a constant and acquiring plural sets of image features regarding one image by varying the constant (col. 3, lines 11-30, Silvers).”

Applicants have reviewed the passages cited by the Examiner, and submit that they do not teach or suggest the features of applicant's invention as presently claimed in applicants' independent claims 1, 9 and 17. The Silvers patent is directed to generating a mosaic image from a plurality of source images to approximate a target image. Col. 2, lines 21-23. Particularly, column 3, lines 11-30 of the Silvers patent cited by the Examiner discloses an organization scheme of source images which are used to generate a mosaic image in a database, where a source image directory includes identical source image files at different levels of resolution. Column 4, lines 1-2 of the Silvers patent teaches that during the matching process of the source images to the target image, the target image is divided into a plurality of tiles, and column 4, lines 12-44 of the Silvers patent discloses that each tile of the target image is matched to a source image by comparing a sub-region of the tile image to a corresponding source image pixel and computing an error sum value for each of the source images. The source images selected for comparing with the tile image have a resolution corresponding to the selected number of sub-regions in the tile image. Col. 3, lines 40-65.

Thus, the Silvers patent only teaches that the source images available for matching with the tile images of the target image are stored in the source image database at different pixel resolutions, so that a source image with an appropriate resolution matching the number of sub-regions of the tile image is selected before calculating the error sum value. Thus, there is no teaching in the Silvers patent of acquiring plural sets of image features for one image by multiplying each of the image features in a set of image features by a constant and varying the constant. Therefore, the Silvers patent fails to teach or suggest obtaining a set of image features by calculating an image feature of each of the tile images and generating a set of image features by multiplying each of the image features constituting the set of image features that have been stored in the storage means, by a constant, and acquiring plural sets of image features regarding one image by varying the constant.

Applicants' amended independent claims 1, 9 and 17, and their respective dependent claims, which recite the above features therefore patentably distinguish over the Silvers patent. Accordingly, applicants' amended independent claims 1, 9 and 17, and their respective dependent claims, are believed to patentably distinguish over the Silvers patent.

With respect to applicants' independent claims 19 and 20, the Examiner has argued as follows:

"Silvers discloses: ...feature calculating means for calculating image feature of each color components of the retrieval source image, respectively (col. 7, lines 25-36, Silvers);...generation means for generating a set of features by multiplying one of the calculated image feature and the image feature of the selected image by a variable (col. 7, lines 55 to col. 8, lines 15, Silvers);..."

Applicants have reviewed the passages of the Silvers patent cited by the Examiner, and believe that these passages fail to teach or suggest obtaining a set of image features by calculating image features of each color component of the retrieval source image and

generating a set of image features by multiplying the set of image features of the retrieval source image or the set of image features of the selected image by a variable. Specifically, column 7, lines 25-35 of the Silvers patent discloses the process of creating a mosaic image from the source images matched to the tiles of the target image, where a corresponding full-sized version of the source image matched to each tile is located and these source images are bound together to create a mosaic image. This portion of the Silvers patent cited by the Examiner, however, is completely silent as to calculating image feature of each color component of the retrieval source image to obtain a set of image features.

Moreover, column 7, line 55 to column 8, line 15 of the Silvers patent describes the effect of using higher pixel resolution source images in matching the source images to the target image tiles. Specifically, this portion of the Silvers patent provides an example of a mosaic image generated using tiles divided into 4x4 sub-regions and source images having 4x4 pixel resolution and an example of another separate mosaic image generated using tiles divided into 16x16 sub-regions and using source images having 16x16 pixel resolution. Thus, as discussed above, the Silvers patent only discloses that the source image matched to the tile image has a pixel resolution corresponding to the number of sub-regions into which the tile image is divided. There is therefore no teaching or suggestion in the Silvers patent of obtaining a set of image features by calculating image feature of each color component of the retrieval source image and of generating a set of image features by multiplying the set of image features of the retrieval source image or the set of image features of the selected image by a variable.

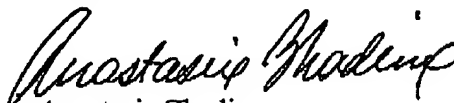
Applicants' amended independent claims 19 and 20, which recite such features, therefore patentably distinguish over the Silvers patent.

In view of the above, it is submitted that applicants' claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested.

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COWAN, LIEBOWITZ & LATMAN, P.C.
1133 Avenue of the Americas
New York, NY 10036
(212) 790-9200

Respectfully submitted,



Anastasia Zhadina
Reg. No. 48,544
Attorney for Applicant